

Final Review 6

① Write an equation for each table below. Don't forget to check your equation.

X	Y
0	7
1	3
2	-1
3	-5
4	-9

$\rightarrow -4$

$\rightarrow -4$

$\rightarrow -4$

$$y = -4x + 7$$

linear

X	Y
0	$\frac{8}{3}$
1	4
2	6
3	9
4	13.5

$\rightarrow +2 \cdot 1.5$

$\rightarrow +3 \cdot 1.5$

not
linear

$$y = ab^x$$

$$y = \frac{8}{3}(1.5)^x$$

X	Y
0	4
1	12
2	36
3	108
4	324

$\rightarrow \cdot 3$

$\rightarrow \cdot 3$

$\rightarrow \cdot 3$

exponential

$$y = 4(3)^x$$

② $y = ab^x$ → what we
↓ multiply by
start

$$y = 300(0.75)^x$$

① 1st bounce $y = 300(0.75)^1$
 $y = 225$

② $y = 300(0.75)^x$

3) Use the properties of exponents to rewrite the expression.

a) $(x^4 y^4)^2 \rightarrow \boxed{x^8 y^8}$

c) $(2x^4)^3 (2x^4)^2$
 $8x^{12} \cdot 4x^8$
 $\boxed{32x^{20}}$

e) $\frac{6x^9}{5x^4} \boxed{1.2x^5}$

g) $\frac{(2x)^2}{(2x)^2} = \boxed{1}$

b) $6(2x^4 y)^2$
 $6(4x^8 y^2)$
 $\boxed{24x^8 y^2}$

d) $(x(yz)^2)^3$
 $(x y^2 z^2)^3$
 $\boxed{x^3 y^6 z^6}$

f) $\frac{24x^5}{8x^5} = 3x^0$
 $\boxed{3}$

h) $(x^{-2})(x^5)$
 $\boxed{x^3}$

④ $y = ab^x \rightarrow y = a(1+r)^x$ increase
 $y = a(1-r)^x$ decrease

\downarrow start \downarrow rate as a decimal

① $y = 800(1+0.018)^x$

② $y = 800(1+0.018)^9 \approx \939.33

③ $y = 800(1+0.018)^{24} \approx \$1,227.54$

④ $1500 = 800(1+0.018)^x$

guess & check

36 months, \$1,520

35 months, \$1,493

\Rightarrow between 35 & 36 months
about 3 years